

REMARKS

This paper is being presented in response to the non-final official action dated June 24, 2005, wherein: (a) claims 1-18 are pending; (b) claims 1, 2, 15, and 18 have been rejected under 35 USC § 102(b) as being anticipated by Liang U.S. Patent No. 5,972,758 (the "Liang patent"); (c) claim 3 has been rejected under 35 USC § 103(a) as being obvious over the Liang patent in view of the disclosure at page 53 of Stanley Wolf, "Silicon Processing for the VLSI ERA," Vol. 2, pp. 53, 198 (Lattice Press 1990) (the "Wolf publication"); (d) claims 4 and 5 have been rejected under § 103(a) as being obvious over the Liang patent in view of page 53 of the Wolf publication and further in view of Lin U.S. Patent No. 6,716,757 (the "Lin patent") and Sugishima U.S. Patent No. 4,352,724 (the "Sugishima patent"); (e) claims 7-9 have been rejected under § 103(a) as being obvious over the Liang patent in view of the Lin patent; claims 8-14 have been rejected under § 103(a) as being obvious over the Liang patent in view of the Lin and Sugishima patents; (f) claim 16 has been rejected under § 103(a) as being obvious over the Liang patent in view of Tanaka U.S. Patent No. 6,841,452 and page 198 of the Wolf publication; and, (g) claim 17 has been objected to as being dependent upon a rejected base claim — but would be allowable if rewritten in independent form to incorporate the limitations of the base claim and any intervening claims. Reconsideration and withdrawal of the rejections and objection are respectfully requested in view of the foregoing amendments and following remarks.

According to the action, independent claim 17 has been objected to due to its dependence upon a rejected base claim (i.e., independent claim 1), but would be allowable if rewritten in independent form to include the recitations of the base claim. Accordingly, by the foregoing amendments, claim 17 has been canceled and independent claim 1 has been amended to recite the features previously recited in claim 17. In view of the amendment, it is respectfully submitted that independent claim 1 and all claims dependent therefrom (i.e., claims 1-16 and 18) are allowable. Furthermore, the outstanding rejections under §§ 102(b) and 103(a) are rendered moot by the amendment.

New claim 19 has been added and mirrors much of claims 1 and 2. Specifically, claim 19 recites etching the semiconductor substrate to a given depth *so that polymer is generated* by means of a first etch process using the mask pattern as an etch mask, thus forming a trench and remaining the polymer at a sidewall of the trench. New claim 19 also recites forming the trench to a target depth by means of a second etch process in a vertical and a horizontal directions *using the mask pattern and the polymer as an etch mask*, while forming the trench to have the bottom wider than the top in width. Support for the claim can be found in claims 1 and 2 as originally filed and also in the specification at, for example, page 7, lines 10-15.

New claim 19 is patentable over the art cited in the action because the Liang patent does not disclose or suggest the step of remaining the polymer at the sidewall of the trench and etching using the polymer as the etch mask. Instead, the Liang patent discloses the formation of a SiN spacer 310 on the edge of the trench, as shown in Figs. 3(c) and 3(d) of the Liang patent. The deficiencies in the Liang patent's disclosure are not remedied by any of the other patents or publications cited in the action. Consequently, the applicant respectfully submits that new claim 19 also is allowable.

No new matter has been introduced by the foregoing amendments.

In view of the foregoing, cancellation of claim 17, entry of the amendment to claim 1, entry of new claim 19, reconsideration and withdrawal of the rejections and objection, and allowance of all pending claims 1-16, 18, and 19 are respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, he is urged to contact the undersigned attorney.

Respectfully submitted,

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